TWO GREAT BATTLE-SHIPS.

THE KEARSARGE AND KENTUCKY NEARLY READY TO BE LAUNCHED.

THEY WILL BE UNSURPASSED IN FORMIDABILITY —IMPROVEMENTS IN THE DESIGNS FOR THEIR ARMAMENT—A TERRIFIC BATTERY POWER.

Washington, Dec. 11.—Unsurpassed in formidability the world over, and unequalled in rapidity of construction among American armored defenders, the seagoing coastline battle-ships Kearsarge and Kentucky will be floated in the James River, Virginia, the latter part of next month, within a year and a half after their keels were laid; and in less than a year more, under the contracts, they must be turned over to the Government ready for cruising and for the installation of guns.

Provision was made by act of Congress, approved March 2, 1895, for the construction of two battle-ships, to cost, exclusive of armament, not more than $4,000,000 each, one of which was to be built on the Pacific Coast or the waters connected therewith, provided low responsible bids could be obtained from that locality. A Virginia corporation, the Newport News Ship Building and Dry Dock Company, which had been recently established with the most modern plant in existence, and which was at the time constructing three gunboats for the United States, put in such low bids that all competitors were distanced, and on January 2, 1896, signed the contract to deliver the hulls and machinery within three years, for $2,250,000 each, the Indiana class of ships, which were smaller, having cost over $3,000,000. The keels of the two monsters were laid June 30, within six months later, and to-day over 50 per cent of the work has been completed and passed by the Government inspectors, while the material for the remaining half of the work is in such shape on the ground that the vessels could be turned over to the naval authorities within three months, without the heavy armor, however, for on account of the unwillingness of domestic armor factories to accept the limit of price fixed by Congress, and because of the statutory prohibition against its purchase abroad, none but the diagonal side plating of the two ships has been manufactured.

Congress further required that one of these battle-ships should be named the Kearsarge, for the famous frigate that sunk the Alabama and after a long career went down on Roncador Reef a few years ago. A special provision had to be made by Congress for this, as, under the law, ships of this size must be named for States, and Congress alone can modify this requirement. The name Kentucky was chosen for the other by the officials of the Navy Department, but in accordance with the usual custom of constructors, they have been known as "No. 5" and "No. 6," and will be up to the time of their actual baptism, the four other battle-ships having been the Indiana, Massachusetts, Oregon and Iowa.

FIRST SHIPS UNDER THE LAST SECRETARY.

The Kearsarge and Kentucky were the first battle-ships authorized and designed wholly under the last Administration, and the last Secretary of the Navy was exceedingly anxious that they should be, without question, the best of their class; hence all questions arising in their design were carefully and fully investigated, and advantage was taken of the experience gained in the construction of our other battle-ships, as well as of the development abroad of similar types.

One of the paramount requirements laid down was that these vessels should draw less water, when fully laden, than any other first-class battle-ships either in this country or abroad. The largest foreign battle-ships when fully laden draw in the neighborhood of twenty-eight feet of water, and the previous American battle-ships touched twenty-four feet at normal displacement, but with all weights on board, owing not only to the increased draught due to the weight, but to the settling by the stern accompanying the increased weight, draw twenty-seven feet. Battle-ships Nos. 5 and 6, however, have been designed to draw but twenty-five feet with twelve hundred tons of coal on board and equipped with all stores and ammunition. This will enable them to reach all of the principal navy yards and ports of the United States even when fully laden, and will make their docking less difficult than that of the other battle-ships.

The question of the calibre and disposition of the large guns gave rise to more discussion than any other question in connection with these vessels. Chief Constructor Hichborn, who is responsible for all designs under the recent rulings of the Navy Department, held views diametrically differing from those of the Chief of Ordnance, whose bureau designs and builds the guns. The Chief Constructor advocated that the largest guns should be 12 inches in calibre —four being carried in two turrets—and that eight 8-inch guns should be carried in four turrets, making six turrets in all. The Chief of Ordnance proposed the novel scheme of two double-decked turrets on each ship; in the lower part were to be mounted two 13-inch guns, and in the upper part two 8-inch guns, making the heavier battery consist of four 13-inch and four 8-inch guns, in two turrets. The Department finally adopted this plan, and the 13-inch and 8-inch guns will accordingly be mounted on double turrets, one rigidly superposed upon the other, and the relative advantages of the innovation of "putting all the eggs in a single basket" will have to be demonstrated in actual practice.

These gun positions will have complete armor protection from a distance of four feet below the water-line to the top of the 8-inch turret. This armor, as well as all other armor used on the vessels, will be of solid nickel steel, Harveyized and retempered. The lower part of the protection—the barbette, so called—will have armor 15 inches in thickness. The armor of the 13-inch turrets will also be 15 inches, except immediately in front, where it will be made 17 inches. The armor protecting the 8-inch guns will be 9 inches, but that also will be made two inches heavier immediately in front.

In addition to these heavy guns, a secondary battery of fourteen 5-inch rapid-fire guns will be mounted on the main deck between the turrets, and will be protected by continuous armor 6 inches thick—a splinter bulkhead 2 inches thick being worked between each gun station. A numerous battery of smaller 6-pounder and 1-pounder guns will be carried, such guns being placed wherever they fire to advantage.

The protection of the hull against injury to the water-line region will be effected by means of a side armor belt of a maximum thickness of 16½ inches, with a mean depth of 7½ feet, so disposed in reference to the load line that the vessel, with 410 tons of coal on board, will have three and a half feet of this belt armor above the water, and with 1,210 tons of coal on board will have two feet above the load line. The belt will extend from the stem to the after barbette, and will maintain the maximum thickness from the after end of the belt to the forward boiler-room bulkhead, whence it will taper gradually to a thickness of 4 inches at the bow.

Protection will be afforded above the main side armor by a steel belt five inches thick, extending up to the level of the main deck and running in a fore-and-aft direction from the centre of the forward to the centre of the after barbette. On top of the main side armor belt will rest a flat steel deck two and three-quarter inches in thickness, and forward and abaft the machinery and boiler spaces the deck will be inclined at the sides and the thickness on the slopes increased to three and five inches. Further to protect the vessel against raking fire, athwartship there will be bulkheads of armor ten and twelve inches thick at the points where the deck is worked with inclined sides. In addition to the armor plates, cofferdams filled with eleven thousand cubic feet of compressed, fireproofed American corn-pith cellulose, recently tested with such satisfactory results, will be worked the entire length of the vessel in the region of the water line. The conning tower will have armor ten inches in thickness, with a tube seven inches in thickness leading down to the armor deck for the protection of the voice pipes, telegraphs, steering rods, etc.

A FRIGHTFUL DISCHARGE OF STEEL.

Protected by this comparatively invulnerable citadel of armor, the guns of the Kearsarge and Kentucky will fire a broadside once a minute of nearly four tons of conical chilled steel projectiles, driven by nearly four thousand pounds of smokeless powder. Between these frightful discharges the fourteen five-inch rifles could each be discharging fifty-pound shells at the rate of six a minute, or with only half of them in operation would rake an enemy with nearly one every second. In an engagement the twenty 6-pounders would be raining shot in a continuous rattle, and the amount of damage which would be inflicted in five minutes would be simply incredible.

Throughout the vessel the use of wood is reduced to a minimum. The stateroom bulkheads are made of steel covered with cork sheathing, and every attention has been given to lighting, heating, draining and ventilating the vessels in the most improved and efficient manner. All wood materials of every description have been protected by the electric fireproofing process.

As these ships will undoubtedly be flagships, their complements will be 520 persons, officers, seamen and marines, a greater number than in other American ships except the cruiser New-York.

The vessels will be driven by triple-expansion engines actuating twin screws, each screw being propelled by a single engine having cylinders of 33½, 51 and 78 inches diameter, with common stroke of 48 inches, indicating, together with the engines for the air and circulating pumps, a collective horse-power of ten thousand when making about 120 revolutions a minute.

Five boilers—three double-ended and two single-ended—in four water-tight compartments, will generate the necessary speed of sixteen knots.

A comparison of these vessels with any foreign battle-ship built or building will, in every case, be to the advantage of the United States ships. The United States vessels carry heavier guns and more of them; heavier armor, more widely distributed and protecting more thoroughly the vitals of the ship and gun crews. Their normal speed of sixteen knots will be less on paper than that of most foreign battle-ships, but it should be noted that this speed will be obtained with a very moderate forced draught and without unduly pushing the engines, so that it may be expected that at any time this speed can be duplicated by the United States vessels, while it is notorious that foreign battle-ships never again approach their trial speeds. The United States has never fallen into this error as regards its battle-ships, and in every case has required that the maximum contract speeds should be obtained under conditions which could be reproduced again at any time upon a well-drilled ship. As illustrative of this fact it may be noted that the Indiana upon a recent trip, although she had been in the water for over a year and probably lost a half knot of speed through the roughness of her bottom due to the accumulation of marine growth, still made over 15½ knots—the contract requirement being 15 only. The Indiana class will then be really 16-knot ships, and battle-ships Nos. 5 and 6, which will have about the same extreme speed, will be able to manœuvre in company with them satisfactorily.

PROVISION FOR THE COAL SUPPLY.

The battle-ships Kearsarge and Kentucky will carry their full coal supply of 1,200 tons with the greatest ease, their bunker-room being so ample that they will almost carry this amount when the coal is simply dumped in without being trimmed or handled. This amount will be ample for the ordinary contingencies of cruising and for service in time of war along the coast, as, at cruising speed of ten knots, it will be sufficient to enable the vessels to steam over 6,000 miles, and at thirteen knots nearly 4,000 miles. In case the services of these battle-ships were needed at a distance, however, temporary provision could be made by which four hundred or five hundred tons extra coal could be carried, with corresponding increase in the radius of action. They can easily steam from New-York straightaway to the Island of St. Helena.

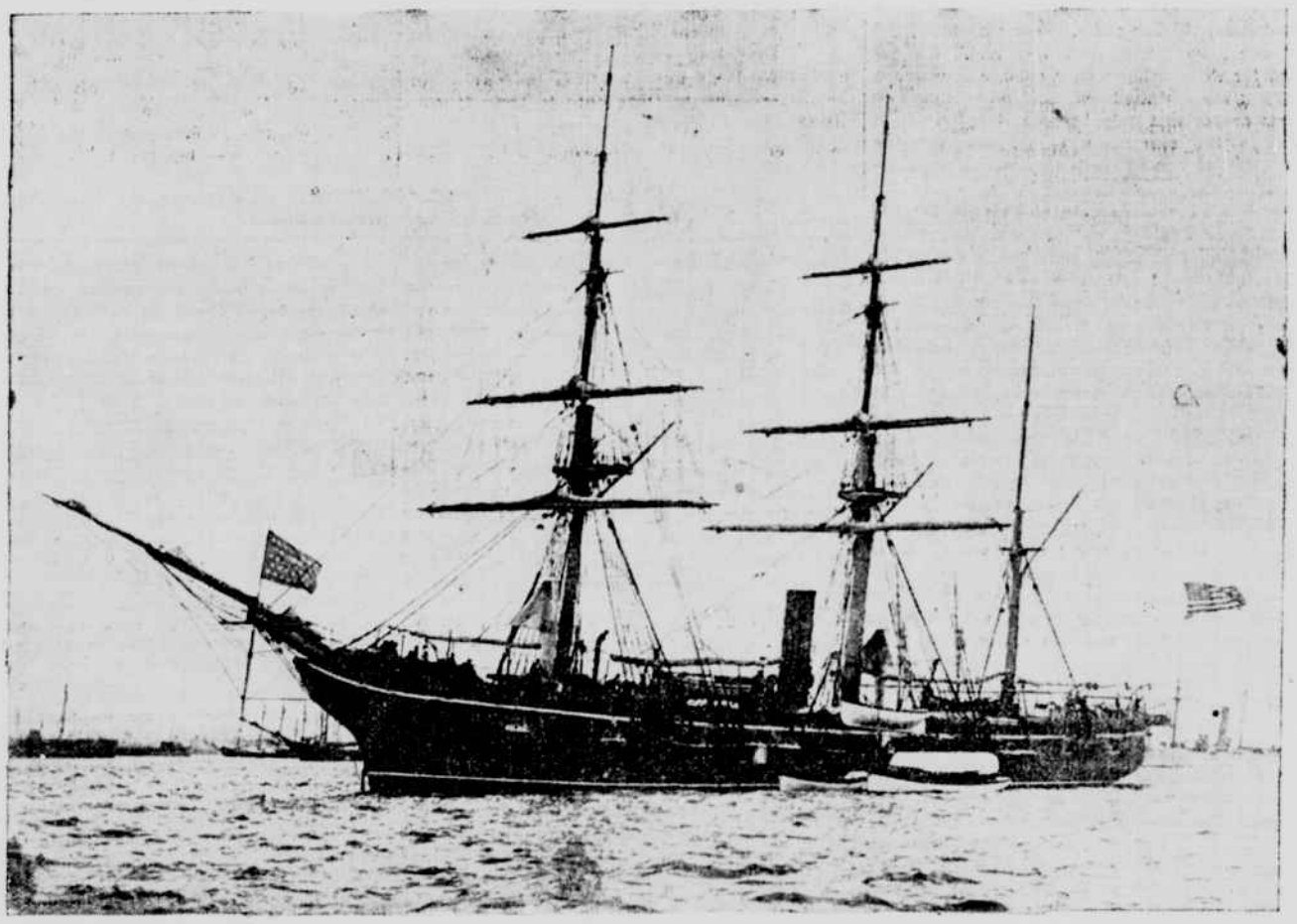
In appearance these ships resemble the Indiana class more than the Iowa, but the single huge mast, or rather tower, of the Indiana is replaced by two graceful masts, and the short smokestacks of the Indiana are lengthened in order to enable more power to be developed and better speed maintained when working under natural draught alone.

Perhaps the most novel feature of these vessels, and the one which is distinctly in advance of other battle-ships, is the overpowering battery of fourteen 5-inch rapid-fire guns, thoroughly protected by 6 inches of the best armor. The 5-inch gun is the largest calibre which can be fired with great rapidity, and the protection given these guns is such that it could be penetrated by but few of the guns carried by any opposing battle-ship. Experience in the late war between China and Japan indicated clearly the power of the rapid-fire guns, and also that to enable such guns to do their best work, they should have more protection than has heretofore been given them.

Great attention has been given in the Kearsarge and Kentucky to the manœuvring power and to steadiness as a gun platform. Reports from the Indiana class indicate that they are thoroughly satisfactory in these respects, but it is thought that the improvements made upon battle-ships No. 5 and No. 6 will insure even better results. The vessels, when completed, with all of their armor and armament, will cost in the neighborhood of $5,000,000 each, and there are not many firms in the country capable of undertaking such heavy work, only three having hitherto competed for any armored vessels in the United States.

The general dimensions and features of the ships are as follows: Length on load-water line, 368 feet; beam, extreme, 72 feet 2.5 inches; freeboard forward, 14 feet 3 inches; freeboard aft, 12 feet 3 inches; mean draught, with 410 tons of coal on board, 23 feet 6 inches; corresponding displacement, 11,525 tons; speed in knots, per hour, 16; indicated horse-power, 10,000; normal coal supply, 410 tons.

Batteries—Main—Four 13-inch breech-loading rifles, four 8-inch breech-loading rifles, fourteen 5-inch rapid-fire breech-loading rifles. Secondary—Twenty 6-pounder rapid-fire, six 1-pounder rapid fire, four Colt machine guns, two field guns for landing and four torpedo tubes for long Whiteheads, two on each broadside.



THE OLD FRIGATE KEARSARGE—AT ANCHOR IN NEW-YORK HARBOR SEVERAL YEARS AGO.

TRAPPED BY A LUNATIC.

From The Iron Age.

Only lunatics are so unreasonable as to get furious when some one disagrees with them, and so the manufacturer and jobber can have their little differences and still be on the most friendly terms and respect one another's opinions. This puts me in mind of a story of a clergyman told me recently. He was visiting an insane asylum, and was told by the man who was showing him around the institution that he was going to introduce him to a patient with whom he must agree, no matter what absurd statements the man might make, otherwise he would be furious. The first thing the insane man said to the clergyman was: "I suppose you know that the Washington Monument was totally demolished by a thunderbolt last night?" "Yes," said the clergyman, "and I felt very sorry to think that a work that had taken so long to complete should be destroyed in an instant."

The insane man next said: "Of course, you read in the evening papers that Queen Victoria had decided to abdicate in favor of her son, the Prince of Wales?"

"Yes," said the clergyman, "and I am not at all surprised."

"Did you read in The New-York Tribune of to-day that McKinley had been impeached?"

"Yes, and I think it would have been only fair to have given him a little longer trial," said the clergyman. Then the insane man looked intently upon that clergyman and said: "You have the air and the garb of a clergyman, but you can lie like the devil!"